

Claims

1. A brushhead assembly attachment system for a power toothbrush, wherein the power toothbrush includes a handle to which a brushhead assembly is removably attached, the handle having a receiving portion, the brushhead attachment system comprising:

a brushhead assembly, which includes a force conversion assembly, adapted for mating with the receiving portion of the handle, including a mounting shaft on which is positioned a bristle unit for brushing teeth, wherein the force conversion assembly is adapted and arranged to convert a driving force into a movement of the mounting shaft to move the bristle unit in a manner to accomplish cleansing of the teeth; wherein the attachment system includes a first connection arrangement between the force conversion assembly and the receiving portion of the handle for preventing rotational movement of the brushhead assembly relative to the handle; wherein the force conversion assembly further includes at least one engaging member which, when the brushhead assembly is operatively positioned in the receiving portion, extends at least partially into an opening in the receiving portion of the handle, which tends to prevent translational movement of the brushhead assembly relative to the handle during operation of the toothbrush; wherein the attachment system is configured and arranged such that the brushhead assembly is removed from the handle or inserted into the handle linearly, directly toward and away from the handle, without rotation of the brushhead assembly being necessary to tighten the brushhead assembly onto the handle or loosen it therefrom.

2. The system of claim 1, wherein the force conversion assembly comprises a combination of a spring assembly which is responsive to a driving force to move the mounting shaft, and a carrier assembly which fits together with the spring assembly and engages the receiving portion of the handle.

3. The system of claim 2, wherein the spring assembly/carrier assembly combination includes two opposing spring

finger members which depend downwardly from an upper edge thereof, mating securely with two associated openings in the receiving portion to prevent translational movement of the brushhead assembly relative to the handle.

4. The system of claim 3, wherein each spring finger member includes an ear portion at a lower end thereof which fits into its associated opening in the receiving portion.

5. The system of claim 4, wherein the brushhead assembly further includes a housing portion and wherein the attachment system includes a disengaging member mounted in the housing and movable such that it acts against the engaging member present in the opening, forcing it out of the opening, so that the brushhead assembly can be readily moved away from the receiving portion.

6. The system of claim 1, wherein the first connection arrangement includes an opening in a wall portion of the force conversion combination, adapted to mate snugly with a rib portion on an internal surface of the receiving portion of the handle.

7. The system of claim 6, including a second connection arrangement which includes a cut-out section in the receiving portion, the cut-out section extending downwardly from an upper edge of the receiving portion, and wherein the force conversion assembly includes a portion which mates snugly with said cut-out portion.

8. The system of claim 2, wherein the carrier assembly includes a portion thereof adapted to carry a fluid pump for moving fluid from a reservoir to the bristle unit.

9. The system of claim 7, wherein the first and second connection arrangements approximately oppose each other around the peripheries of the receiving portion and the force conversion assembly.

10. A brushhead assembly attachment system for a power toothbrush, wherein the power toothbrush includes a handle to which a brushhead assembly is removably attached, the handle having a receiving portion, the brushhead attachment system comprising:

a brushhead assembly which includes a force coupling assembly adapted and arranged to couple a driving force produced by a driver portion of the power toothbrush to a mounting shaft on which a set of bristles is mounted, wherein the force coupling assembly includes a slot therein into which a rib member on an internal surface of the receiving portion of the handle snugly fits to prevent rotational movement of the brushhead assembly relative to the handle and wherein the force coupling assembly includes at least one engaging member which, when the brushhead assembly is operatively positioned in the receiving portion, extends at least partially into an opening in the receiving portion, tending to prevent translational movement of the brushhead assembly relative to the handle during operation of the toothbrush.

11. The system of claim 10, wherein the attachment system is configured and arranged to permit the brushhead assembly to be removed from the handle or inserted into the handle in a linear movement thereof, without rotation of the brushhead assembly.

12. A brushhead assembly attachment system for a power toothbrush, wherein the power toothbrush includes a handle to which a brushhead assembly is removably attached, the handle having a receiving portion, the brushhead attachment system comprising:

a brushhead assembly including a first connection portion which mates with a first part of the receiving portion to prevent rotational movement of the brushhead assembly relative to the handle and a second, separate connection portion which mates with a second, separate part of the receiving portion to prevent translational movement of the brushhead assembly relative to the handle, wherein the attachment system is further configured and arranged to permit the brushhead assembly to be removed from the handle or inserted into the handle linearly, without rotation of the brushhead assembly relative to the handle.